

External evaluation of the PhD program at the Faculty of Medicine, University of Oslo, 2018.

On 22. October, 2018 the Faculty of Medicine appointed the following evaluation committee:

Professor Roland Jonsson, Faculty of Medicine, University of Bergen, Norway (chairman)

Professor Robert Harris, Karolinska Institutet, Stockholm, Sweden

Associate Professor Mia Ericson, Sahlgrenska Akademin, Gothenburg, Sweden

PhD Candidate Jon Magne Letnes, NTNU, Trondheim, Norway

The committee was presented the following **mandate for the evaluation**.

The primary task of the external evaluation committee is to evaluate the scientific quality of the program in light of national and international standards. This includes an evaluation of the program structure, courses offered, supervision, research environment, administrative support, internationalization, resources/infrastructure, candidates' satisfaction, the structure and scientific merit of doctoral dissertations, the attractiveness of the program for new applicants, and the attractiveness of candidates for academic and non-academic positions.

The external evaluation committee should also evaluate the overall program efficiency, including organization, leadership and communication. The evaluation should use nationally and internationally agreed principles for high quality doctoral education as benchmarks for the program evaluation (including the LERU principles, the principles for doctoral training suggested by the European commission and Orpheus' Best Practices for PhD Training). In addition, the evaluation should address the expected learning outcomes as defined in the Norwegian Qualification Framework.

The evaluation committee should take into account the setting of doctoral education in Norway, including the financing of candidates through doctoral research fellowships, either at the degree awarding institution or at external institutions.

The evaluation should result in a report that (i) describes the status of the program compared to relevant benchmarks, and (ii) points to means through which the program can improve its quality and efficiency.

The evaluation committee is asked to submit its report to the Faculty of Medicine no later than January 31 2019.

Evaluators' Report

Based on the report from the Internal Evaluation (The PhD program: Periodic Program Evaluation date October 22, 2018), PhD Supervisor Survey 2018, PhD Candidate Survey 2018, and the Orpheus Self-evaluation Questionnaire Report, provided by the Faculty of Medicine, University of Oslo, and website analysis, a site visit was performed on 14th of November 2018 by Prof. Roland Jonsson, Prof. Robert Harris, Assoc. Prof. Mia Ericson and PhD candidate Jon Magne Letnes.

The discussions with persons in charge of the PhD program took place at the university (the program of the site visit is included as an appendix). Discussions included meetings with the vice-dean of research (as head of the PhD program), the dean of the faculty and one of the persons in charge of the PhD training at the departments. The other two of this category have been interviewed by telephone. Other meetings included discussions with representatives of PhD supervisors and PhD candidates. The meetings were informative and contributed to answer some queries that arose during the analysis of the self-evaluation report. Furthermore, opinions of the various representatives were obtained.

General Characteristics of the Institution and the PhD Program

- University of Oslo (UiO), Norway is a research university that offers PhD programs at different faculties (humanities, law, mathematics and natural sciences, medicine, dentistry, theology, social sciences, and education). The doctoral programs relate to the different faculties. The present visit was focused on the doctoral program at the Faculty of Medicine.
- UiO is characterized by strong research activities with leading research in different fields of biomedicine and health sciences. The time allocated to education is primarily performed through original research.
- In 2017 there were 1456 PhD candidates enrolled in the PhD program accompanied by >900 internal and >600 external main/principal supervisors. Among the co-supervisors >1500 are internal and >1200 are external.
- The length of the PhD program is defined at a national level and is in agreement with the implementation of the Bologna process based on 3-year full-time doctoral education.
- Clinical and teaching activities are performed during the PhD program and the duration is prolonged in accordance with the percentage of time devoted to these activities.
- About 1/3 of PhD candidates come from abroad.
- In order to obtain the PhD degree candidates have to follow courses worth a total of 30 ECTS points. There are two compulsory courses, INTRO I and INTRO II, each giving 5 ECTS. These include transferable skills such as philosophy and theory of science, ethics, methods of science, scientific writing, communication with the public and media, presentation skills, innovation and entrepreneurship. When the PhD project

involves animal studies another compulsory course is provided worth 5 ECTS. Thus the compulsory course requirement will be either 10 or 15 ECTS.

- Research training is boosted through hosting three national graduate level research schools and partnerships with three additional national research schools. The faculty does not provide local, thematically focused research schools.

The PhD Program in relation to ORPHEUS Basic Recommendations

1. RESEARCH ENVIRONMENT

The Faculty of Medicine is divided into three departments (Institute of Health and Society, Institute of Basic Medical Studies, Institute of Clinical Medicine) and one centre (Centre for Molecular Medicine Norway). Research groups may be members of six national research schools (the research environment). The faculty also runs a great number of core facilities (N=19), all also available for PhD training. This means that advanced scientific equipment and highly trained technical staff contribute to research and training of PhD candidates.

The University ensures financial support for research (salary/fellowships) and attendance for international conferences and courses. Costs related to the thesis defence, including the invitation of experts from abroad, are covered by the University. The University is also open to collaboration with industrial and public sector partners with accompanying industrial/public PhD fellowships. The University has considerable connections to the international scientific community through different agreements and international scientific projects. International cooperation is part of the PhD education and PhD candidates have the possibility to visit other laboratories during their training.

2. OUTCOME

Completion of the PhD program entails publication of scientific papers (normally 3 papers or equivalent) and encourages the candidate to develop competencies useful for future career perspectives (e.g. transferable skills).

3. ADMISSION

The admission process is an open and transparent procedure. National and international candidates are invited to apply. A Master's degree or equivalent is required for admission. Each application is evaluated by the three heads of the postgraduate studies at the respective departments. The following is evaluated: 1. Quality assurance of the project descriptions (peer review either internally or externally); 2. Ethics approval; 3. Work contracts and research funding; 4. At least two supervisors; 5. Two/three party contracts; 6. A formal Master's degree or equivalent.

Financial support for the PhD training is provided either by the UiO fellowships, regional health authority fellowships or salaries from the hospitals. A large number of applicants, however, have obtained an MD degree and specialization before admission to the PhD program, which would explain why the mean age of admission (age 35) is

elevated. The University is aware of this issue and have developed a program for early admission during MD studies (Medical Student Research Program, starting after the 2nd year of MD studies).

4. PhD TRAINING PROGRAM

In order to obtain the PhD degree candidates have to follow courses and collect in total 30 ECTS points. Basic courses (INTRO I and INTRO II) are mandatory and account for 10 (=5+5) ECTS points. These include transferable skills such as introduction to ethics, communication skills, research strategy and career development, scientific writing, translational medicine and innovation technology. Ethics is a major part of the INTRO I course. Other courses are elective courses. The candidate can select different courses provided by different national research schools and the more recently established Nordic network (NorDoc).

The training component must be completed and approved before submitting the thesis for evaluation and defense. Courses in laboratory animal science are compulsory for PhD candidates involved in animal experimentation. Teaching activities are highly recommended and some of the candidates have PhD fellowships that are 4 or 5 years in duration, where 25 or 40 % of their time is allocated to teaching activities, respectively

5. SUPERVISION

All of the PhD candidates have at least two supervisors (main supervisor and co-supervisor(s)). The main supervisor has to be a qualified person (PhD, active researcher). At least one of the supervisors must have a teaching position at the Faculty. The co-supervisor can be anyone with a PhD and a good research track record. In general, each supervisor has on average 1.6 candidates although there is no limitation on the number of candidates per supervisor. From the discussion it is clear that supervisors are aware of their responsibilities for including PhD candidates in the academic community. There is no formalized requirement for the role as a PhD supervisor, although the Faculty offers such courses.

6. PhD THESIS

The general feature of the thesis is a compilation of published papers corresponding to \approx 3 original scientific papers with preferentially at least two accepted for publication and at least one in which the PhD candidate is the first author. The thesis summary can be written in one of the three Scandinavian languages but is generally in English. The thesis summary includes a thorough introduction to the topic of the thesis, critical assessment of material and methods, summary of results, discussion, conclusion and future perspectives. The original papers are included as part of the thesis.

7. ASSESSMENT

The assessment procedure involves the designation of a committee, which consists of two external opponents of whom one should preferably come from abroad. The supervisors are not members of the assessment committee. A written report is provided

by the committee before the thesis defence stating if the thesis is worthy of a defence or not. The public defence is evaluated by the committee.

8. STRUCTURE

The PhD program is under the responsibility of the faculty and UiO in agreement with national regulations. The division of research management has the overall responsibility for the quality assurance of the PhD training under the supervision of the vice dean for research and dean of the Faculty.

The PhD program as described above complies with all the basic ORPHEUS recommendations.

PhD Program in relation to ORPHEUS Quality Development Recommendations

There is a compulsory mid-term evaluation of the progress in the PhD project. The evaluation is conducted by an independent committee. The candidates are required to submit annual progress reports, which are then evaluated primarily at the departmental level (deputy head of research). In addition, the candidate and the supervisor are required to have an annual conversation about progress. Sufficient information is available on the website about the PhD program. At the moment compulsory training courses for supervisors are not established.

Other comments

The PhD program at the Faculty of Medicine at UiO is well established and highly structured. The annual output is about 250 theses.

Recommendations to the Faculty of Medicine, University of Oslo, Norway:

1. Engage a vice-dean for doctoral training. This is prudent due to the large volume of PhD candidates and supervisors at the Faculty. The PhD training will also have to face new/upcoming challenges and international standards.
2. Develop compulsory training courses for supervisors.
3. Develop the admission procedure of PhD candidates by establishing a committee with competence to judge the scientific and organizational merits.
4. Increase the resources to the Medical Student Research Program e.g. by employing a scientific person in a 30-50% position as well allocating PhD fellowships for the students to finalize their PhD. Through this the recruitment of professionals to academia will increase as well as a decrease in the age of PhD candidates will follow.
5. Promote self-evaluation of the PhD program by PhD candidates in order to improve supervisor-candidate interactions and the overall PhD program (e.g. Exit Poll).
6. Organize an annual PhD day in order to facilitate interactions between course committees and PhD candidates, between departments and research groups, and the Faculty.

7. Encourage development of the PhD training culture (continuous analysis of advantage/benefits of PhD training, priority of course work, networking etc.).
8. Career development and mobility of the PhD candidates should be addressed more/to a larger extent.
9. Ensure representation of PhD candidates in committees and organs where this is relevant.